

MEMO TO : File
John Deere Electronic Solutions, Inc. - Fargo ISG
Cass County, North Dakota

FROM : Ethan Melder
Environmental Engineer
Division of Air Quality

RE : New non-emergency diesel engine and addition of synthetic minor permit
limits

DATE : June 23, 2025

Information and Discussion:

John Deere Electronic Solutions, Inc. - Fargo ISG (John Deere) submitted an application for a permit to construct to the NDDEQ (Department) on March 6, 2025, for the replacement of one generator, limited to 500 hours of operation per year, at the existing John Deere Fargo ISG building located in Fargo, North Dakota. The facility currently operates under Air Permit to Operate (AOP) No. AOP-27866 v4.0. During review of the application, the Department determined it would be appropriate to issue a synthetic minor permit to construct for the addition of the new non-emergency diesel engine. During the Department's file review, it was also determined that the hour limitations in AOP-27866 v4.0 for the existing engines were not federally enforceable as no public comment period was held prior to permit issuance. As a result, the existing limits are included with this permit action to satisfy the public comment requirements for the federally enforceable limits on the new engine and existing facility engines. Several unit descriptions were also updated to fully reflect how the units are permitted.

Emission Units:

Emission units (EUs) involved in this cleanup action include the existing diesel engines (EUs 1-2) which did not undergo a public comment period for their restricted limits when originally permitted. The new diesel engine (EU 5), replacing EU 3, will similarly undergo a public comment period for restricted limits. The natural gas fired engine (EU 4) is included in this action but will not be affected. An updated PTE (*Table 1*) is included as part of this process, at the end of this memo.

Emission Limits:

This permit action incorporates the requested 500 hours per year limit on the existing diesel engines (EUs 1-2) as well as the new diesel engine (EU 5). These limits are listed in Permit to Construct (PTC) ACP-18288 v1.0 Table 3-1.

The application for the new generator set also included emission factors well below the New Source Performance Standard (NSPS) Subpart IIII requirements. The Department determined that these restrictions are unnecessarily stringent from a regulatory perspective. The Department encourages John Deere to meet manufacturer specifications, however the limits applied in the permit will be based on NSPS IIII requirements, as applicable. The application of these limits will not impact John Deere's obligations for compliance with ACP-18288 v1.0.

Regulatory applicability

40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compressor Ignition Internal Combustion Engines

This subpart applies to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines. It covers provisions and requirements related to emission standards, certification, labeling and recordkeeping, performance tests, monitoring requirements, and compliance with standards and maintenance requirements. The subpart also includes definitions and general provisions that apply to the regulations.

Applicability and Expected Compliance

The new engine has a maximum rating capacity of 932 horsepower (hp) and is subject to NSPS IIII. The facility will operate and maintain the engines per manufacturer specifications and comply with the applicable notification, reporting, and recordkeeping requirements of §60.4214. The facility will also follow the compliance requirements for emissions standards of §60.4211.

40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

Applicability and Expected Compliance

The facility engines (EUs 1-2, 4-5) are subject to the requirements under this subpart. The requirements of Subpart ZZZZ for the engines are met by complying with the requirements of NDAC 33.1-15-12 [40 CFR 60], Subpart IIII and Subpart JJJJ.

There is no other regulatory applicability affected with this permit action.

Conclusion:

ACP-18288 v1.0 will be issued to include federally enforceable limits on new and existing engines as well as to update emission unit descriptions. The facility will remain a synthetic minor source based on the limits to the generators. A full air quality effects analysis is not needed as there are no physical changes to EUs 1, 2, and 4, and the change in the potential to emit from the new generator is minor. The Department will make a final recommendation on the issuance of a Permit to Construct for John Deere Electronic Solutions, Inc. - Fargo ISG following completion of a 30-day public comment period. The public comment period will run from June 25, 2025, through July 25, 2025.

Table 1 - PTE (tons per year)^A

Emission Unit Description	Emission Unit (EU)	Emission Point (EP)	CO	NO_x	SO₂	VOCs	PM	PM₁₀	PM_{2.5}
Detroit Diesel engine (2,935 bhp)	EU 1	EP 1	4.04	17.61	1.14	0.52	0.51	0.51	0.51
Mitsubishi Diesel engine (1,501 bhp)	EU 2	EP 2	2.06	9.01	0.58	0.26	0.26	0.26	0.26
Cummins natural gas engine (112 bhp)	EU 4	EP 4	0.03	0.05	0.00	0.01	0.00	0.00	0.00
Gillette Diesel engine (932 bhp)	EU 5	EP 5	1.80	1.53	0.36	2.45	0.08	0.08	0.08
Total (without Fugitives):			7.9	28.2	2.1	3.2	0.9	0.9	0.9
Total (with Fugitives):			7.9	28.2	2.1	3.2	0.9	0.9	0.9

^A Abbreviations:

PM: filterable and condensable particulate matter

PM_{2.5}: filterable and condensable particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($\leq 2.5 \mu\text{m}$)

PM₁₀: filterable and condensable particulate matter with an aerodynamic diameter less than or equal to 10 microns ($\leq 10 \mu\text{m}$) including PM_{2.5}

SO₂: sulfur dioxide

NO_x: oxides of nitrogen

CO: carbon monoxide

VOCs: volatile organic compounds

HAPs: hazardous air pollutants as defined in Section 112(b) of the Clean Air Act